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		60/225,214	14 August 2000 (14.08.2000)	US	
		60/226,279	18 August 2000 (18.08.2000)	US	
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(21) International Application Number: PCT/US01/01348		60/227,182	22 August 2000 (22.08.2000)	US	
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(22) International Filing Date: 17 January 2001 (17.01.2001)		60/227,009	23 August 2000 (23.08.2000)	US	
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(30) Priority Data:		60/229,513	5 September 2000 (05.09.2000)	US	
		60/229,509	5 September 2000 (05.09.2000)	US	
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60/225,759	14 August 2000 (14.08.2000)	US	60/236,327	29 September 2000 (29.09.2000)	US
60/225,213	14 August 2000 (14.08.2000)	US	60/236,370	29 September 2000 (29.09.2000)	US

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(54) Title: NUCLEIC ACIDS, PROTEINS, AND ANTIBODIES

(57) Abstract: The present invention relates to novel proteins. More specifically, isolated nucleic acid molecules are provided encoding novel polypeptides. Novel polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human polynucleotides and/or polypeptides, and antibodies. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to these novel polypeptides. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.



60/236,368	29 September 2000 (29.09.2000)	US	60/251,479	6 December 2000 (06.12.2000)	US
60/236,367	29 September 2000 (29.09.2000)	US	60/251,869	8 December 2000 (08.12.2000)	US
60/237,039	2 October 2000 (02.10.2000)	US	60/251,856	8 December 2000 (08.12.2000)	US
60/237,038	2 October 2000 (02.10.2000)	US	60/251,868	8 December 2000 (08.12.2000)	US
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60/239,935	13 October 2000 (13.10.2000)	US			
60/241,785	20 October 2000 (20.10.2000)	US	(71) Applicant (for all designated States except US): HUMAN		
60/241,809	20 October 2000 (20.10.2000)	US	GENOME SCIENCES, INC. [US/US]; 9410 Key West		
60/240,960	20 October 2000 (20.10.2000)	US	Avenue, Rockville, MD 20850 (US).		
60/241,787	20 October 2000 (20.10.2000)	US			
60/241,808	20 October 2000 (20.10.2000)	US	(72) Inventors; and		
60/241,221	20 October 2000 (20.10.2000)	US	(75) Inventors/Applicants (for US only): ROSEN, Craig,		
60/241,786	20 October 2000 (20.10.2000)	US	A. [US/US]; 22400 Rolling Hill Lane, Laytonville,		
60/241,826	20 October 2000 (20.10.2000)	US	MD 20882 (US). BARASH, Steven, C. [US/US]; 111		
60/244,617	1 November 2000 (01.11.2000)	US	Watkins Pond Boulevard #301, Rockville, MD 20850		
60/246,474	8 November 2000 (08.11.2000)	US	(US). RUBEN, Steven, M. [US/US]; 18528 Heritage Hills		
60/246,532	8 November 2000 (08.11.2000)	US	Drive, Olney, MD 20832 (US).		
60/246,476	8 November 2000 (08.11.2000)	US			
60/246,526	8 November 2000 (08.11.2000)	US	(74) Agents: HOOVER, Kenley, K. et al.; Human Genome		
60/246,475	8 November 2000 (08.11.2000)	US	Sciences, Inc., 9410 Key West Avenue, Rockville, MD		
60/246,525	8 November 2000 (08.11.2000)	US	20850 (US).		
60/246,528	8 November 2000 (08.11.2000)	US			
60/246,527	8 November 2000 (08.11.2000)	US	(81) Designated States (national): AE, AG, AL, AM, AT, AU,		
60/246,477	8 November 2000 (08.11.2000)	US	AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,		
60/246,611	8 November 2000 (08.11.2000)	US	DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,		
60/246,610	8 November 2000 (08.11.2000)	US	HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,		
60/246,613	8 November 2000 (08.11.2000)	US	LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,		
60/246,609	8 November 2000 (08.11.2000)	US	NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,		
60/246,478	8 November 2000 (08.11.2000)	US	TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.		
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60/249,299	17 November 2000 (17.11.2000)	US	KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian		
60/249,210	17 November 2000 (17.11.2000)	US	patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European		
60/249,216	17 November 2000 (17.11.2000)	US	patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,		
60/249,217	17 November 2000 (17.11.2000)	US	IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,		
60/249,211	17 November 2000 (17.11.2000)	US	CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).		
60/249,215	17 November 2000 (17.11.2000)	US			
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60/249,265	17 November 2000 (17.11.2000)	US			
60/250,391	1 December 2000 (01.12.2000)	US	For two-letter codes and other abbreviations, refer to the "Guid-		
60/250,160	1 December 2000 (01.12.2000)	US	ance Notes on Codes and Abbreviations" appearing at the begin-		
60/256,719	5 December 2000 (05.12.2000)	US	ning of each regular issue of the PCT Gazette.		
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60/251,988	5 December 2000 (05.12.2000)	US			

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60/249,218	17 November 2000 (17.11.2000)	US			
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60/249,212	17 November 2000 (17.11.2000)	US			
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60/256,719	5 December 2000 (05.12.2000)	US			
60/251,030	5 December 2000 (05.12.2000)	US			
60/251,988	5 December 2000 (05.12.2000)	US			